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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,396	01/02/2004	Takeshi Yamamoto	247209US2	2864
22850	7590	01/18/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			CHEN, WEN YING PATTY	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/749,396	Applicant(s) YAMAMOTO, TAKESHI	
	Examiner Wen-Ying P. Chen	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 8 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's Amendment filed Dec. 15, 2005 has been received and entered. Claims 5 and 9 are cancelled per the Amendment filed. Therefore, claims 1-4 and 6-8 remain pending in the current application.

Claim Objections

Claim 1 is objected to because of the following informalities: Claim 1 recites, "the columnar spacer being disposed not as the first pixel but as the second color filter layer at the second pixel", should be changed to "the columnar spacer being disposed not at the first pixel but as the second color filter layer at the second pixel". Appropriate correction is required.

Claim 6 is objected to because of the following informalities: Claim 6 depends on a cancelled claim, therefore, for the purpose of examination, claim 6 will be treated as though depending on claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

Claims 1-2, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai et al. (US 6768531) in view of Haim et al. (US 5150235).

With respect to claim 1 (Amended): Ochiai et al. disclose in Figure 10 a liquid crystal display apparatus comprising:

a plurality of pixels which are disposed in a matrix (Column 8, lines 12-15), the pixels including a first pixel with a first gap (element T1 as indicated in the figure below) for interposition of the liquid crystal layer (element LC) between the first substrate (element SUB1) and the second substrate (element SUB2), and a second pixel with a second gap (element T2 as indicated in the figure below) that is smaller than the first gap, the first pixel including a first color filter layer that has a first film thickness and mainly passes first color light, and the second pixel including a second color filter layer that has a second film thickness, which is greater than the first film thickness, and mainly passes second color light; and a columnar spacer (element SUP) for creating the second gap, the columnar spacer being disposed not at the first pixel but at the second color filter layer at the second pixel.

Ochiai et al. fail to disclose that the first color filter passes the first color light having a wavelength that is greater than a wavelength of the second color light.

However, Haim et al. disclose a liquid crystal display comprising of a first color filter (element 16B) having a first gap passing a first color light and a second color filter (element 16A) having a second gap smaller than the first gap passing a second color light, wherein the first color light has a wavelength greater than the second color light.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display apparatus as taught by Ochiai et al. wherein the color filter thickness with respect to the wavelength is structured as taught by Haim et al., since Haim et al. teach that such structure of the color filter increases the uniformity of optical radiation as function of angle thus provide a wide viewing angle of the display device (Column 2, lines 10-13 and 28-32).

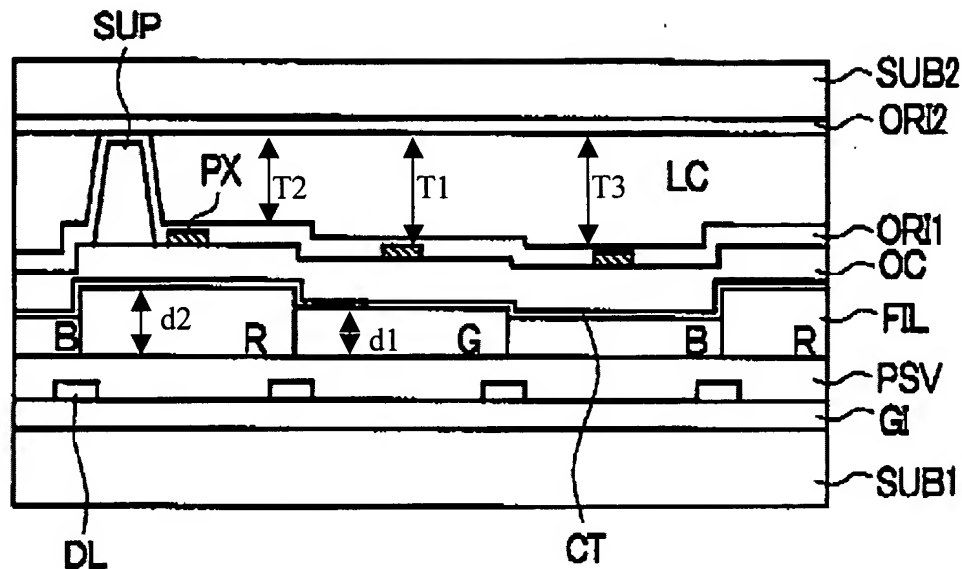
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As to claim 2: Ochiai et al. further disclose that the columnar spacer is formed of a photosensitive resin material (Column 14, lines 12-16).

As to claim 6: Ochiai et al. further disclose in Figure 2 and 10 that the first substrate (element SUB1) includes the first color filter layer, the second color filter layer and the columnar spacer (element SUP), and the first substrate further includes scan lines (element GL) disposed in a row direction, signal lines (element DL) disposed in a column direction, switching elements (element TFT) disposed near intersections of the scan lines and the signal lines, and pixel electrodes (element PX) that are connected to the switching elements and are disposed in a matrix.

As to claim 8: Ochiai et al. further disclose in Figure 10 that the plurality of pixels further include a third pixel with a third gap (element T3) that is greater than the first gap (element T1).

FIG. 10



Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai et al. (US 6768531) and Haim et al. (US 5150235) in view of Yanagawa et al. (US 2002/0113936).

Ochiai et al. and Haim et al. disclose all of the limitations set forth in the previous claims, but fail to specifically disclose that the columnar spacer has light shield properties or that the liquid crystal display apparatus further comprises a light shield layer and that both the light shielding layer and the columnar spacer are formed of the same material.

However, Yanagawa et al. disclose in Figure 2 a liquid crystal display apparatus comprising of a light shield film (element BM) disposed in a picture-frame shape along a peripheral edge of the display region and a columnar spacer (element 10), which are formed of the same material and both having light shield properties (Paragraphs 0057 and 0058).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display apparatus as taught by Ochiai et al. and Haim et al. wherein the display apparatus comprises of a light shield film and that the columnar spacer has light shielding properties and being formed of the same material as the light shield film as taught by Yanagawa et al., since Yanagawa et al. teach that the aperture ratio of the display apparatus can thus be improved (Paragraph 0059).

Allowable Subject Matter

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Non of the cited prior art along or in combination teach or suggest that the columnar spacer is disposed not at the first color filter but at a second color filter having a gap thickness smaller than that created by a first color filter and further having a third color filter creating a third gap wherein the thickness of the third gap is smaller than the gap of the second color filter.

Response to Arguments

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Ying P. Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wen-Ying P Chen
Examiner
Art Unit 2871

WPC
1/09/06


ANDREW SCHECHTER
PRIMARY EXAMINER